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| 10/693,901 | 10/28/2003 | Yasuhiko Shiomi | 1232-4495US1 | 2644 |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com
Shopkins@Morganfinnegan.com
jmedina@Morganfinnegan.com

Office Action Summary

Application No.

10/693,901

Applicant(s)

SHIOMI, YASUHIKO

Examiner

Nelson D. Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/212,940.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/28/2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Examiner acknowledges the preliminary amended claims filed on August 19, 2004. **Claims 1-23** have been canceled. **Claims 24-31** have been amended. **Claims 32-34** have been newly added.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 24-27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., US Patent 6,108,036 in view of Konomura et al., US Patent 4,845,553.**

Regarding claim 24, Harada et al. discloses an imaging apparatus (Fig. 1) having an imaging unit (Fig. 1: 4), which forms an object image, and generates an image by photoelectric conversion, a generator (Fig. 1: 7) which generates a single

image from a plurality of images obtained by the imaging unit, and a storage unit (Image shift control 13 in conjunction with recording medium 9 as shown in fig. 1) which converts the image obtained by the imaging unit or the generator means into a predetermined designated data format, and stores the converted image in a storage medium (Fig. 1: 9), said apparatus comprising: a controller (Fig. 1: 13), arranged to designate the data format and control mean supply of an image to the storage unit in correspondence with a detected photographic mode (Col. 24, line 43 – col. 26, line 16; col. 27, lines 26-67; col. 29, lines 22-30; col. 4, lines 47-55; col. 34, lines 9-27; col. 38, lines 29-67; col. 39, line 1 – col. 40, line 11; col. 42, lines 9-24; col. 15, lines 15-59; col. 50, line 49, line 49 – col. 51, line 17).

Harada et al. does not explicitly disclose a detector, arranged to detect spatial frequency characteristics of the image obtained by the imaging unit; and that said designation of said data format and said controlling supply of an image to the storage unit is performed in correspondence with a detected photographic mode.

However, Konomura et al. discloses an image data compressing device for an imaging device (endoscope as shown in fig. 4) comprising an imaging unit (Fig. 4: 11), which forms an object image, and generates an image by photoelectric conversion; a generator (Fig. 1: 37) which generates a single image from a plurality of images obtained by the imaging unit (red, blue and green image signals), and a storage unit which converts the image obtained by the imaging unit into a predetermined designated data format (compress the image data based on the spatial frequency of each color), and stores the converted image in a storage medium (memories 16, 17 and 18 as

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shown in fig. 1), wherein said apparatus analyzes the image data and compresses it based on the spatial frequency of each color of the captured image by the imaging unit (this reads on the limitations of having a detector, arranged to detect spatial frequency characteristics of the image obtained by the imaging unit and a controller arranged to designate the data format and control supply of an image to an output terminal in correspondence with the detected spatial frequency characteristics) (Col. 2, lines 20-45; col. 3, lines 6-63; col. 4, line 20 – col. 5, line 43; col. 6, lines 44-55; col. 7, lines 15 – col. 8, line 5).

Therefore, taking the combined teaching of Harada et al. in view of Konomura et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Harada et al. by having a detector, arranged to detect spatial frequency characteristics of the image obtained by the imaging unit; and having said controller arranged to designate said data format and to control supply of an image to the storage unit in correspondence with a detected photographic mode. The motivation to do so would have been to reduce the overall memory required to store the image data as suggested by Konomura et al. (Col. 5, lines 28-43).

Regarding claim 25, limitations can be found in claim 24.

Regarding claim 26, the combined teaching of Harada et al. in view of Konomura et al. as discussed and analyzed in claim 24 teaches that said detector detects high-frequency components for the image obtained by the imaging unit (See Harada et al., col. 42, lines 52-64; Konomura et al., Col. 2, lines 29-46).

Regarding claim 27, the combined teaching of Harada et al. in view of Konomura et al. as discussed and analyzed in claim 24 teaches that the detector detects characteristics of an object based on the image obtained by the imaging unit (by detecting characteristics of the image prior to compress and/or store the image, Harada et al. teaches that the detector detects characteristics of an object based on the image obtained by the imaging unit; col. 42, lines 52-64; see also Konomura et al., Col. 2, lines 29-46).

Regarding claim 30, claim 30 is a method claim of the apparatus in claim 24. Limitations have been discussed and analyzed in claim 24.

Regarding claim 31, A computer program product comprising stored on a computer readable medium comprising computer program code for executing the imaging processing of the imaging apparatus of Harada et al. in view of Konomura et al. as discussed and analyzed in claims 24 and 30 (Harada et al. inherently discloses said computer program product comprising stored on a computer readable medium comprising computer program code for executing the imaging processing of the imaging apparatus in control circuit 13 as shown in fig. 1). Grounds for rejecting claim 24 apply here.

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., US Patent 6,108,036 in view of Konomura et al., US Patent 4,845,553 and further in view of Okada et al., US Patent 6,266,086.

Regarding claim 28, the combined teaching of Harada et al. in view of Konomura et al. as discussed and analyzed in claim 24 teaches an optical shifter (Fig. 1: 19), arranged to optically shift an imaging position of the object image in the imaging unit; wherein said generator drives said optical shifter to capture the plurality of images used for generating the single image (Col. 27, lines 26-67; col. 36, lines 34-64; col. 38, lines 29-67; col. 39, line 1 – col. 40) but fails to teach that a corrector, arranged to correct an influence of vibration on said apparatus using said optical shifter and that said generator drives said optical shifter via said corrector to capture said plurality of images used for generating said single image.

However, Okada et al. discloses an imaging apparatus comprising correction means (7, 8, 9 and 10 as shown in figs. 1 and 10) for correcting the influence of vibration on the apparatus using optical shift units (3 and 4 as shown in figs. 1 and 10), wherein a generation means (6 as shown in fig. 10) drives the optical shift units via the correction means to capture a plurality of images (Co. 7, lines 27-44; col. 12, lines 57-67; col. 13, lines 1-8).

Since the imaging apparatus in Harada et al. is not firmly supported, but supported in an unstable fashion (i.e. at the user's hands) the images are shifted or moved by the vibration caused to the imaging apparatus in addition to the image shifting operation, thus causing deteriorated quality in a still or high definition image, one of an

ordinary skill in the art would find obvious to apply the teaching of Okada et al. to the teaching of Harada et al. in view of Konomura et al. to have a corrector, arranged to correct an influence of vibration on said apparatus using said optical shifter and the generator driving said optical shifter via said corrector to capture said plurality of images used for generating said single image. The motivation to do so would have been to optimize the image processing method based on the detected movement amount, thereby obtaining a high-definition without being affected by the moving or vibration amount.

6. Claims 29 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., US Patent 6,108,036 in view of Konomura et al., US Patent 4,845,553 and further in view of Okada et al., US Patent 6,266,086 and further in view of Jain, US Patent 5,249,053.

Regarding claim 29, the combined teaching of Harada et al. in view of Konomura et al. fails to teach that said controller executes the designation and the control in consideration of a free storage capacity of the storage medium.

However, Jain discloses the concept of changing the compression ration of an image capturing device (Fig. 1) based on the available space for recording image data in a recording medium (Fig. 1: 26) in order to allow full utilization of the available space in a recording medium (Col. 1, lines 11-21; col. 2, lines 47-67; col. 4, line 63 – col. 5, line 10; col. 7, line 60 – col. 8, line 44; col. 9, lines 53-67; see also abstract).

Therefore, taking the combined teaching of Harada et al. in view of Konomura et al. in view of Jain as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Harada et al. and Konomura et al. to have the controller executing the designation and the control in consideration of a free storage capacity of the storage medium. The motivation to do so would have been to allow full utilization of the available space in a recording medium as suggested by Jain (Col. 1, lines 11-21).

Regarding claim 32, the combined teaching of Harada et al. in view of Konomura et al. in view of Jain as discussed and analyzed in claim 29 teaches that the controller designates a data format with a high compression rate and supplies the image obtained by the imaging unit to the storage unit irrespective of a photographing mode set by an operation unit, when the free storage capacity of the storage medium is not more than a predetermined value (See Jain; col. 1, lines 11-21; col. 2, lines 47-67; col. 4, line 63 – col. 5, line 10; col. 7, line 60 – col. 8, line 44; col. 9, lines 53-67; see also abstract). Grounds for rejecting claim 29 apply here.

Regarding claim 33, limitations have been discussed and analyzed in claim 29.

Regarding claim 34, limitations have been discussed and analyzed in claim 29.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

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from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

As the disclosed in MPEP 804.01 discloses:

The third sentence of 35 U.S.C. 121 prohibits the use of a patent issuing on an application with respect to which a requirement for restriction has been made, or on an application filed as a result of such a requirement, as a reference against any divisional application, if the divisional application is filed before the issuance of the patent. The 35 U.S.C. 121 prohibition applies only where the Office has made a requirement for restriction. The prohibition does not apply where the divisional application was voluntarily filed by the applicant and not in response to an Office requirement for restriction. This apparent nullification of double patenting as a ground of rejection or invalidity in such cases imposes a heavy burden on the Office to guard against erroneous requirements for restrictions where the claims define essentially the same invention in different language and which, if acquiesced in, might result in the issuance of several patents for the same invention.

However, the Examiner noted that during prosecution of the parent case (now U.S. Patent No. 6,650,361 B1) scope of the claims changed so that the claims of the

present application or the Patent are not consonant with the restriction requirement made by the Examiner during prosecution of the parent case, since the claims have been changed in material respects from the claims at the time the requirement was made.

Also in MPEP 804.01, it is disclosed the following situations where the prohibition against double patenting rejections under 35 U.S.C. 121 does not apply:

The claims of the different applications or patents are not consonant with the restriction requirement made by the examiner, since the claims have been changed in material respects from the claims at the time the requirement was made. For example, the divisional application filed includes additional claims not consonant in scope to the original claims subject to restriction in the parent. *Symbol Technologies, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 19 USPQ2d 1241 (Fed. Cir. 1991) and *Gerber Garment Technology, Inc. v. Lectra Systems, Inc.*, 916 F.2d 683, 16 USPQ2d 1436 (Fed. Cir. 1990). In order for consonance to exist, the line of demarcation between the independent and distinct inventions identified by the examiner in the requirement for restriction must be maintained. 916 F.2d at 688, 16 USPQ2d at 1440.

Since in the parent case the scope of the allowed claims is not consonant with the elected Group, and the claims of the present application a similar scope, the Examiner understands that the following Double Patenting rejection made on the claims presented in this Application against the claims of U.S. Patent No. 6,650,361 B1 is proper.

8. **Claims 24-34** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-11** of U.S. Patent No. 6,650,361

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B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Regarding claim 24, claim 24 is a broader recitations from claim 1 in the patent because the difference between claim 24 and claim 1 in the patent is that claim 1 in the Patent requires *an optical shift unit which optically shifts an imaging position of the object image in said imaging unit* and that the generator generates a single image from a plurality of images obtained by said imaging unit *by a plurality of shifts using said optical shift unit*.

Regarding claim 25, limitations are the same as limitations in claim 2 in the Patent.

Regarding claim 26, limitations are the same as limitations in claim 3 in the Patent.

Regarding claim 27, limitations are the same as limitations in claim 4 in the Patent.

Regarding claim 28, the limitations "*an optical shifter, arranged to optically shift an imaging position of the object image in the imaging unit*" are present in claim 1 of the Patent and the limitations "*a corrector, arranged to correct an influence of vibration on said apparatus using said optical shifter, wherein the generator drives said optical shifter via said corrector to capture the plurality of images used for generating the single image*" are the same as limitations in claim 5 in the Patent.

Regarding claim 29, limitations are the same as limitations in claim 6 in the Patent.

Regarding claim 30, claim 30 is a broader recitations from claim 8 in the patent because the difference between claim 30 and claim 8 in the patent is that claim 8 in the Patent requires *an optical shift unit which optically shifts an imaging position of the object image in said imaging unit* and that the generator generates a single image from a plurality of images obtained by said imaging unit *by a plurality of shifts using said optical shift unit*.

Regarding claim 31, claim 31 is a broader recitations from claim 11 in the patent because the difference between claim 31 and claim 11 in the patent is that claim 8 in the Patent requires *an optical shift unit which optically shifts an imaging position of the object image in said imaging unit* and that the generator generates a single image from a plurality of images obtained by said imaging unit *by a plurality of shifts using said optical shift unit*.

Regarding claim 32, limitations are the same as limitations in claim 7 in the Patent.

Regarding claim 33, limitations are the same as limitations in claim 9 in the Patent.

Regarding claim 34, limitations are the same as limitations in claim 10 in the Patent.

Contact


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 9:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez
Examiner
Art Unit 2622

NDHH
September 22, 2007


LIN YE
SUPERVISORY PATENT EXAMINER